

NO. XVI.—A LIST OF THE FRESHWATER FISHES, BATRACHIANS, AND REPTILES OBTAINED BY MR. J. STANLEY GARDINER'S EXPEDITION TO THE INDIAN OCEAN.

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(Plate 40.)

Read 7th May, 1908.

THE following list will give all the necessary data for the study of the distribution of the Lower Vertebrates inhabiting the Seychelles and Aldabra, as allusion has been made to the few species recorded by others but not obtained by the Expedition. As regards the Tortoises of Aldabra, no specimens of which were brought home by Mr. Gardiner, I am inclined to regard them as of one species only, *Testudo gigantea*, to which I have made allusion, *à propos* of a young specimen given to Mr. Gardiner at Mahé.

The extinct Crocodile of the Seychelles was probably *Crocodylus niloticus*, distributed over the greater part of Africa and Madagascar.

### FRESHWATER FISHES.

1. *Chanos salmoneus*, Bl.

*Chagos Archipelago*: Petit Coquillage, Peros Banhos.

A widely distributed fish occurring in the sea as well as in fresh water. I see no reason for regarding *Ch. mossambicus*, Peters, as a distinct species, although I have not been able to examine the type specimen. As to *Ch. lubina*, C. & V., which has been generally accepted, on the faith of Valenciennes's description, as a valid species, I am informed by Dr. Pellegrin, who has kindly examined the types at my request, that the fin-formula (D. 19, A. 15) as originally given is incorrect. The specimen from Bourou (Quoy et Gaimard) has D. 16, A. 11; that from Mauritius (Dassumier) has D. 15, A. 10; whilst the three from the Seychelles (Dassumier) have D. 14-15, A. 10-11. There is therefore no doubt that *Ch. lubina* is also a synonym of *Ch. salmoneus*, the only reason for separating it being the supposed difference in the number of dorsal and anal rays.

2. *Anguilla virescens*, Peters.

*Praslin*.

Freshwaters of East Africa, breeding in the sea.

3. *Haplochilus playfairi*, Gthr.

*Mahé*: Cascade River; Under Moine; Château Margot, 1000 f. *Praslin*: Stream above Côte d'Or; Midlands, 1000 f.

The habitat of this species is restricted to the brackish and fresh waters of the Seychelles.

4. *Eleotris ophiocephalus*, C. & V.

*Praslin*: Stream above Côte d'Or. *Silhouette*.

Inhabits brackish and fresh waters of Madagascar, the Comoros, and the Seychelles. Is also known from various islands in the eastern parts of the Indian Ocean.

This little series only further exhibits the well-known poverty of the freshwater fish-fauna of the islands in the Indian Ocean. The species listed above belong to widely-distributed genera which have representatives in the sea or at least in brackish water.

In addition to the species obtained in fresh water by Mr. Stanley Gardiner, a Cyprinodont, *Fundulus melanospilus*, Pfeffer, also occurring on the Zanzibar coast, and four widely-distributed brackish-water Perciforms, *Kuhlia tæniura*, C. & V., *Apogon hyalosoma*, Blkr., *Ambassis urotænia*, Blkr., and *Eleotris fusca*, Bl. Schn., are reported to enter fresh water in the Seychelles.

## BATRACHIANS.

### APODA.

1. *Hypogeophis rostratus*, Cuv.

*Mahé*: Cascade Estate, 1000 f.; Château Margot, 1400 f. *Praslin*. *Silhouette*.

2. *Hypogeophis alternans*, Stejn.

*Mahé*: Cascade Estate, 1000-2000 f. *Praslin*. *Silhouette*.

Both these species are confined to the Seychelles; a third species (*H. guentheri*, Blgr.) is from Zanzibar.

### PRASLINIA, gen. nov.

Squamosal narrowly separated from parietal. Teeth small and very numerous, in two series in the lower jaw. Eye distinct. Tentacle globular, in front of and close to the eye. Cycloid scales imbedded in the skin. No tail.

The skull is more flattened and the teeth more numerous than in any other known genus of Cæciliids. Among the genera with scales, with two series of mandibular teeth, and with the squamosals not suturally united with the parietals, *Praslinia* is well characterized by its rounded tentacle surrounded by a complete ring-like groove and by the absence of even a rudimentary tail.

3. *Praslinia cooperi*, sp. n. (Plate 40. fig. 1.)

Head and body much depressed. Snout rounded, scarcely projecting beyond the mouth, about as long as the distance between the eyes, which are very small; tentacle on a line with the lower border of the eye, the distance between them not more than the diameter of the latter. 40 to 48 teeth on each side of the upper jaw, and about as many in the outer mandibular series on each side; about 45 inner mandibular teeth altogether. Body short, about 20 times as long as broad, ending obtusely just behind the vent; 140 to 160 folds, at first wide apart and interrupted above and beneath, then alternately nearly complete and restricted to the sides, and lastly (in posterior third of body) all complete and close together. Uniform blackish brown.

Total length 230 millim.

Two specimens from Praslin.

4. *Cryptopsophis multiplicatus*, Blgr.

*Mahé*: Cascade Estate, 1000 f. *Silhouette*.

The monotypic genus *Cryptopsophis* was established on a single specimen from the Seychelles, without more exact indication of locality.

## ECAUDATA.

5. *Rana mascareniensis*, D. & B.

*Mahé*: Up to 1400 f. *Praslin*. *Morne*.

Distributed over the greater part of Africa, from Egypt and Senegambia to Zululand and Angola, and found also in Madagascar, the Mascarenes, and the Seychelles.

## NESOMANTIS, gen. nov.

Pupil horizontal. Tongue elliptical, entire, free behind. Vomerine teeth present. Tympanum hidden. Fingers and toes free, the tips dilated into small but very distinct disks; outer metatarsals not separated by web. Sternum cartilaginous. Terminal phalanges pointed.

Allied to *Sooglossus*, Blgr., but distinguished by the presence of vomerine teeth and the absence of the claw-like dermal termination of the digits.

6. *Nesomantis thomasseti*, sp. n. (Plate 40. fig. 2.)

Vomerine teeth in two short oblique series well behind the level of the choanæ. Head much depressed, a little broader than long; snout rounded, a little shorter than the orbit; no canthus rostralis; loreal region very oblique, feebly grooved; nostril nearer the end of the snout than the eye; interorbital space as broad as the upper eyelid. Fingers short, first shorter than second; toes moderate; no distinct subarticular or metatarsal tubercles. The tibio-tarsal articulation reaches the eye; tibia half the length of head and body. Skin smooth; a glandular fold from the eye to the shoulder. Purplish brown above, with darker symmetrical markings very similar to those of *Sooglossus sechellensis*; a pair of small light spots on each side of the anterior part

of the back; a light line on the coccygeal region meeting a perpendicular one on the back of the thighs, which is continued along the inner side of the leg and the tarsus; lower parts brown, with whitish spots and marblings; a **L**-shaped whitish line along the middle of the throat and belly, intersected by another across the breast.

From snout to vent 45 millim.

A single female specimen from the Cascade, Mahé, at an altitude of 1500 feet, was given to Mr. Gardiner by Mr. H. P. Thomasset, from whom the British Museum had previously received the first examples of the allied but dwarfed frog, *Sooglossus sechellensis*.

7. *Sooglossus sechellensis*, Bttgr. (Plate 40. fig. 3.)

Mahé: Cascade, 1800–2000 f. *Morne*, 2000 f.

The largest of the numerous specimens collected measures 25 millim. from snout to vent.

The genus *Sooglossus* was proposed by me for a single species, *Arthroleptis sechellensis*, discovered by Dr. Brauer and accurately described by Prof. Boettger. The figure given by Dr. Brauer was intended to show the curious manner in which the male carries the tadpoles, other details being neglected. It is therefore desirable to give a correct figure of this little-known Batrachian.

8. *Megalixalus sechellensis*, Gthr.

Mahé: Château Margot, 1400 f.; Cascade Estate. *Praslin*.

The genus *Megalixalus* is distributed over Tropical Africa and Madagascar. This species is confined to the Seychelles.

A series of larval stages were obtained at Château Margot. The tadpole, of a blackish brown, is remarkable for its long tail (body 18 millim., tail 44); otherwise it is very similar to that of *Hylambates*. Labial teeth in  $\frac{4}{3}$  series.

## REPTILES.

### CHELONIA.

1. *Testudo gigantea*, Schweigg.

A young specimen, nine months old, with divided caudal plate, from Mahé, where a number of specimens, originally imported from Aldabra, are kept in a state of semi-domestication.

Mr. Rothschild's studies on extensive material procured since the publication of the Catalogue of Chelonians in the British Museum (1889) tend to confirm my suggestion (p. 168) that the species distinguished by Dr. Günther as *T. elephantina*, *ponderosa*, *holotissa*, and *gigantea* are founded on individual variations and should be united under the oldest name, *T. gigantea* \*.

\* Cf. W. Rothschild, Novit. Zool. iv. 1897, p. 407.

From the account of Mahé specimens given by P. Schacht\*, it is not improbable that *T. daudinii* will also have to be referred to the synonymy of *T. gigantea*. Whether the recently described *T. gouffei*, Rothschild †, from Therese Island, St. Anne's Channel, is specifically distinct is difficult to say, as the description rests on a single specimen. I suppose "double nuchal plate" to be a slip for "double caudal plate" in that description.

No remains of the large tortoise which once lived on the Seychelles appear to be preserved. It is therefore impossible to decide whether *T. gouffei* is a survivor of these or whether, like the tortoises of Aldabra, it has been imported from other islands.

## 2. *Sternothærus sinuatus*, A. Smith.

A single adult specimen from La Digue Island, Seychelles, answers entirely to my definition of this species in the 'Catalogue of Chelonians,' p. 194. Specimens from the same island have been referred by Stejneger ‡ to *S. nigricans*, which has a shorter and thicker shell, a broader interorbital region, and no trace of cusps on the sides of the median notch of the upper jaw.

This specimen is well matched by two from Mazoe, Mashonaland, presented to the British Museum by Mr. J. ff. Darling. As in them, the plastron is black, whilst it is uniform yellow in the specimen from La Digue Island, mentioned in the 'Catalogue of Chelonians.' I feel therefore unable to accept the "subspecies *seychellensis*" proposed by Siebenrock §.

The habitat of *S. sinuatus* extends from Somaliland to Natal.

## 3. *Sternothærus nigricans*, Donnd.

Two specimens from Diego Garcia.

Inhabits Portuguese East Africa, N.W. Rhodesia, and Madagascar.

## EMYDOSAURIA.

### 3 A. *Crocodylus niloticus*, Laur.? (Extinct.)

Fragments of skull and mandible from a marsh at Anse Royale, Mahé, received from Mr. H. P. Thomasset and Mr. L. Tonnet, are, so far as I can judge, not separable from *C. niloticus*, which occurs over nearly the whole of Africa, as well as in Madagascar.

## LACERTILIA.

### 4. *Diplodactylus inexpectatus*, Stejneger.

Mahé: Cascade, 1000 f.; Cascade Estate, 800 f.; Château Margot, 1400 f.

When this species was described by Stejneger in 1894, the genus *Diplodactylus* was believed to be restricted to Australia. Several species have, however, since been described from Madagascar, one from German East Africa, and one from the French Congo.

\* Wiss. Ergebn. Valdivia, iii. 1902, p. 104. Cf. also Siebenrock, Zool. Anz. xxvi. 1903, p. 366.

† Nov. Zool. xiii. 1906, p. 753.

‡ Proc. U.S. Nat. Mus. xvi. 1894, p. 713.

§ Voeltzkow's Reise O.-Afr. ii. Schildkr. p. 38 (1905).

5. *Hemidactylus frenatus*, D. & B.

*Chagos Arch.*: Diego Garcia Beach, Barachios, Salomon, Peros.

*Carqudos Carajos*: Siren, Establishment.

*Amirantes*: Poivre, Eagle.

A species of wide distribution, ranging from Corea to the Malay Peninsula and Archipelago, eastwards to New Guinea. Occurs on many of the islands of the Western Pacific and Indian Oceans. Also known from Somaliland and St. Helena, and reported from the Seychelles by Boettger. As for many Geckos, this wide distribution is probably to be accounted for by human introduction through ships.

6. *Hemidactylus gardineri*, sp. n. (Plate 40. fig. 4.)

Snout a little longer than the distance between the eye and the ear-opening, once and one-third the diameter of the orbit; forehead concave; ear-opening small, oval, oblique, about half the diameter of the eye. Body and limbs moderate. Digits free, moderately dilated, inner well developed; 4 or 5 lamellæ under the inner digits, 6 or 7 under the median. Snout covered with small convex granules; hinder part of head with minute granules intermixed with round tubercles; rostral four-sided, twice as broad as deep, with median cleft above; nostril pierced between the rostral, three or four nasals, and sometimes also the first upper labial; 9 to 12 upper and 8 to 10 lower labials; symphyseal large, triangular; two or three pairs of chin-shields, median largest and forming a very short suture behind the point of the symphyseal or separated by a small zygous shield. Upper surface of body covered with small granules intermixed with oval or subtriangular, ribbed, more or less distinctly keeled tubercles disposed rather irregularly. Ventral scales small, cycloid, imbricate. Male with a long series of 12 to 14 femoro-præanal pores on each side, the præanal pores more distinct than the femorals. Tail feebly depressed, covered above with very small scales intermixed with large pointed tubercles in 6 longitudinal series, below with a median series of transverse plates. Greyish above, with dark spots and angular or wavy darker cross-bars; white beneath.

Total length . . . . .	96 millim.
Head . . . . .	15 „
Width of head . . . . .	10 „
Body . . . . .	35 „
Fore limb . . . . .	14 „
Hind limb . . . . .	20 „
Tail . . . . .	46 „

Several specimens from Farquhar Island and from Cerf Island, Farquhar Group. Others from Aldabra (coll. Tonnet and Thomasset).

This small Gecko is very closely related to *H. mabuia*, which has been reported from Aldabra by Dr. Stejneger.

7. *Hemidactylus mabuia*, Mor.

*Mahé*: Cascade Estate, 800 f.

Inhabits the West Indies, Central and South America, Tropical Africa, and Madagascar.

8. *Hemidactylus brookii*, Gray.

*Amirantes*: Desroches Atoll.

The range of this species extends across tropical Africa to India, Ceylon, Further India, Southern China, and the Malay Archipelago.

9. *Gehyra mutilata*, Wiegman.

*Mahé*: Port Victoria; Cascade, 1000 f.

Known from Madagascar, Mascarenes, Seychelles, Ceylon, Burma, Malay Peninsula and Archipelago, New Guinea, Sandwich Islands, and Western Mexico.

10. *Lepidodactylus lugubris*, D. & B.

*Chagos Arch.*: Diego Garcia Beach, Salomon.

*Mahé*: Château Margot. *Praslin*: Anse Marie-Louise. *Coetivy*.

Inhabits the Malay Peninsula and Archipelago, New Guinea and neighbouring islands, and most of the islands of the South Pacific.

11. *Eluronyx sechellensis*, D. & B.

*Mahé*: Montagu Alphonse Cascade, 1800 f.; Cascade, 1000 f. *N. Cousin*. *Frigate*. *Praslin*: Anse Marie-Louise. *Silhouette*.

The femoro-præanal pores vary from 24 to 29 altogether.

This species is confined to the Seychelles. The second species of the genus inhabits Madagascar.

12. *Phelsuma madagascariense*, Gray.

*Mahé*: Château Margot, 1400 f.; Cascade, 1000 f.; Cascade Estate, 800 f. *Silhouette*. *Praslin*: Anse Marie-Louise. *Morne*.

*Aldabra* (coll. Thomasset).

*Amirantes*: St. Joseph Island, D'Arros Island.

In this series of specimens the number of the femoro-præanal pores varies between 23 and 37, the number, roughly speaking, increasing with the size of the lizard.

Originally described from Madagascar, this Gecko has since been found in the Seychelles, on Aldabra (var. *abbotti*, Stejneger), and on the East Coast of Africa (probably imported).

13. *Phelsuma laticauda*, Bttgr.

*Farquhar Island*.

Known from Madagascar and the Comoro Islands.

14. *Mabuia sechellensis*, D. & B.

*Mahé*: Cascade Estate, 800 f.; Cascade, 1000 f.; Château Margaux, up to 1400 f.  
*Praslin*: Silhouette.

*Amirantes*: St. Joseph, D'Arros.

The scales round the middle of the body number 34 to 40; the frontonasal is constantly in contact with the rostral.

This species was known only from the Seychelles.

15. *Mabuia wrightii*, Blgr.

*N. Cousin*.

38 to 42 scales round the middle of the body; frontonasal sometimes forming a narrow suture with the rostral, this suture, if present, narrower than that between the frontonasal and the frontal.

This fine Lizard, originally described from the Seychelles, without further particulars, is easily distinguished from *M. sechellensis* by the much larger size (130 millim. from snout to vent), the shorter and blunter snout, and the greater width of the frontal in its posterior part; also by the absence of any trace of a light streak from the upper lip to the groin. The examination of the large series of specimens placed in my hands by Mr. Stanley Gardiner does not confirm Mr. Stejneger's opinion\* that *M. wrightii* is a synonym of *M. sechellensis*.

16. *Ablepharus boutonii*, Desjard.

*Aldabra* (coll. Thomasset).

The specimens belong to the var. *peronii*, Coct., which is known from East Africa, Papua, and Australia. Specimens from Aldabra were referred by Stejneger to the var. *pæcilopleurus*, Wieg., which differs in the higher number of scales round the body. But the varieties of this widely and irregularly distributed species are so ill-defined, that not much importance can be attached to the naming of them.

17. *Scelotes braueri*, Bttgr.

*Mahé*: Cascade Estate, 2000 f.; in forest under dead leaves.

Only known from Mahé, where it was discovered a few years ago by Dr. Brauer.

18. *Scelotes gardineri*, sp. n. (Plate 40. fig. 5.)

Snout short, obtuse, not projecting beyond the mouth; eye moderate; lower eyelid scaly; ear-opening rather large, vertically oval. Supranasals forming a median suture; a postnasal between the supranasal and the first labial; frontal about twice as long as the frontonasal, bell-shaped, narrowed in front and with a notch on each side for the posterior-inner angle of the first supraocular; no præfrontals; five supraoculars, second largest, fifth small; no frontoparietals; interparietal a nearly equilateral triangle, as long as or a little longer than the frontonasal, embraced by the frontal and the parietals;

\* Proc. U.S. Nat. Mus. xvi. 1894, p. 720.



fifth upper labial below the centre of the eye and entering the orbit. 30 to 34 scales round the middle of the body. Body short, the distance between axilla and groin once and one third to once and a half the distance between end of snout and fore limb. Limbs short, not meeting when adpressed, with five short digits; the fore limb, stretched forwards, reaches the ear or a little beyond. Tail a little longer than head and body, thick at the base and tapering gradually. Reddish brown above, with darker mottlings or interrupted longitudinal streaks; sides whitish, with crowded black spots forming a band, sharply defined above, from the snout to the base of the tail; limbs dark brown, with light spots; lower parts white, the lower lip, and sometimes the chin, spotted with blackish.

The largest specimen, with injured tail, measures 72 millim. from snout to vent. The following measurements are those of a smaller example, with intact tail:—

Total length . . . . .	112 millim.
Head . . . . .	12 „
Width of head . . . . .	9 „
Body . . . . .	38 „
Fore limb. . . . .	11 „
Hind limb . . . . .	16 „
Foot . . . . .	8 „
Tail . . . . .	62 „

Several specimens of this very distinct new species were obtained on Mahé (Château Margot, 1400 f., and Mare aux Cochons, 2000 f.) and on Praslin by Mr. Stanley Gardiner. A specimen of the same species had been obtained in February 1906 on Mahé, at an altitude of 2000 feet, by Mr. Meade-Waldo, when accompanying the Earl of Crawford on the R.Y. 'Valhalla.'

19. *Sepsina valhallæ*, sp. n. (Plate 40. fig. 6.)

Snout obtuse, scarcely projecting beyond the labial margin; eye moderate; lower eyelid scaly; ear-opening much smaller than the eye-opening; frontal twice as long as the frontonasal, slightly longer than broad, angularly emarginate on each side by the first supraocular and posteriorly by the interparietal; five supraoculars; six supra-ciliaries; interparietal longer than broad, half as long as the frontal; fourth upper labial entering the orbit. 28 scales round the middle of the body, equal. Limbs short, pentadactyle; the fore limb, stretched forwards, reaches the ear or not quite so far. Tail long and thick. Brown above; neck with dark cross-bars, which break up and gradually pass into small spots on the anterior part of the body, and into longitudinal streaks on the posterior part of the body and on the tail; lower parts white.

Tail length (tail reproduced) . . . . .	185 millim.
Head . . . . .	16 „
Width of head . . . . .	12 „
Body . . . . .	90 „
Fore limb. . . . .	12 „
Hind limb . . . . .	19 „

Two specimens from Isle de Lix, Glorioso Islands, were presented to the British Museum by the Earl of Crawford (R.Y. 'Valhalla'). A third specimen from Glorioso Island (Capt. Pearson) is in Mr. Gardiner's collection.

Very closely allied to *S. melanura*, Gthr., from Madagascar. Distinguished by the broader frontal shield and the coloration.

Another close ally of *S. melanura* is *S. teres*, Vaillant, from the Comoro Islands.

#### RHIPTOGLOSSA.

20. *Chamæleon tigris*, Kuhl.

*Mahé*: Château Margot, 1400 f.; Cascade. *Praslin*.

This well-known species has also been reported from Zanzibar, but the specimens may have been brought over from the Seychelles.

#### OPHIDIA.

21. *Boodon geometricus*, Schleg.

*Mahé*: Cascade, 1000 f. *Frigate Island* (Mr. Dupont).

This Snake is confined to the Seychelles.

22. *Lycognathophis sechellensis*, Schleg.

*Mahé*: Cascade, 1000 f.; Château Margot, 1400 f. *Praslin*. *Frigate*. *Silhouette*.

This Snake belongs to a monotypic genus peculiar to the Seychelles. The coloration varies very much. Specimens from Silhouette are grey, yellow, pale brown, dark brown, or nearly black above; greyish white, uniform or more or less speckled with brown, bright yellow, or black beneath.

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#### EXPLANATION OF PLATE 40.

- Fig. 1. *Praslinia cooperi*, nat. size.  
 1 a.     "     "     Side view of head,  $\times 2\frac{1}{2}$ .  
 1 b.     "     "     Open mouth,  $\times 3\frac{1}{2}$ .  
 2. *Nesomantis thomasseti*, nat. size.  
 2 a.     "     "     Open mouth, nat. size.  
 3. *Sooglossus sechellensis*, nat. size.  
 3 a.     "     "     Lower view of hand,  $\times 4$ .  
 4. *Hemidactylus gardineri*, nat. size.  
 4 a.     "     "     Chin,  $\times 2\frac{1}{2}$ .  
 4 b.     "     "     Lower view of foot,  $\times 3\frac{1}{2}$ .  
 5. *Scelotes gardineri*, nat. size.  
 6. *Sepsina valhalla*, nat. size.